

BC hydro

Corporate Business Plan

For the period 1989 to 1992



proud of our Service

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CORPORATE BUSINESS PLAN for the period 1989 - 1992

Further information is available from the
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**FINANCIAL PLANNING DEPARTMENT
FINANCE AND ADMINISTRATION**

1989



proud of our Service

B.C. HYDRO CORPORATE BUSINESS PLAN

This summary of B.C. Hydro's Corporate Business Plan provides an overview of the company's planned business direction in the coming years and how it plans to meet its commitments to the province, its customers and its employees.

It starts with an assessment of B.C. Hydro's current position and the forces that will likely shape the company's direction in the future. Based on B.C. Hydro's mission statement and objectives, a series of business strategies have been formulated, designed to capitalize on the company's strengths and opportunities and address its weakness and threats. Financial resources have been allocated to these strategies and a three year financial plan has been developed. A number of key performance indicators have also been identified to measure how well the company is doing in achieving its objectives.

While a comprehensive discussion of B.C. Hydro's electric system planning is beyond the scope of this report, the business plan is fully consistent with the 20 year resource plan and 10 year electric system plan of the corporation and often references these two documents. A more detailed analysis of specific energy issues is available in two reports:

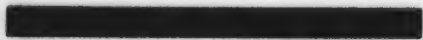
Electric Load Forecast, 1988/89 to 2008/09

Twenty Year Resource Plan, 1989 to 2008.

Further information on these reports may be obtained from the Resource Planning Department, Corporate Affairs
970 Burrard Street, Vancouver, B.C.

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CHOICES FOR THE FUTURE

In the future, making not just choices but the right choices will become an ever-increasing challenge for B.C. Hydro. Surpluses of energy within our system in past years have now been absorbed by economic growth and we must prepare for a period when the demand for electricity will match our ability to supply it.

By aggressively pursuing the leadership initiatives outlined in this publication, we are working to meet our many commitments. First and foremost is our commitment to ensuring a reliable, competitively priced supply of electricity for the province. However, of equal importance is our commitment to the people of British Columbia in terms of supporting local economic development and operating efficiency, to the customers we serve in the form of superior customer service, and to being a good employer for the people who work at B.C. Hydro.

To effectively carry out our mandate, we are putting increased emphasis on open communications, on not only providing information about the choices we must face in order to maintain an efficient and reliable energy supply in the future, but also on actively soliciting the input of those affected by those choices.

Our business plan details the increased commitment of resources that will be required in the coming years to meet our goals. And while these expenditures are deemed essential, we are cognizant of the necessity to review carefully each initiative before we commit to specific expenditures.

One of the critical financial components of the Corporate Business Plan is our goal of holding rate increases to a maximum of three percent for each of the next three years. To achieve this, B.C. Hydro is facing the immediate challenge of finding better and more efficient ways to utilize our existing electric capacity and to service our customers.

Accountability is an important element of any plan. Our plan sets down performance goals for our corporation and describes how we will measure our success in meeting those goals. As we move to implement the initiatives outlined in this document and to fine tune our action plans, it is the determination and enthusiasm of all our employees that will ensure our success in achieving results.

L.I. (Larry) Bell
Chairman and Chief Executive Officer

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THE BUSINESS OF B.C. HYDRO

As Canada's third largest electric utility, B.C. Hydro serves more than 1.2 million customers.

Today B.C. Hydro remains unique as a utility. It is almost completely hydroelectric based and renowned internationally for its expertise in building hydroelectric projects on some of the most diverse and complex river basins in the world.

The corporation supplies energy to a variety of users ranging from heavy industry to suburban households to rural farms. The majority of B.C. Hydro customers are served by the corporation's modern hydroelectric plants, linked together by an extensive system of transmission lines. The few remote communities not connected to the B.C. Hydro grid are serviced through small local generating plants.

B.C. Hydro was established in 1962 through the merger of the previous Public Power Commission with B.C. Electric and a number of other private electrical utilities. The resulting new Crown corporation was given a mandate to assist B.C.'s future economic growth by developing the relatively untapped major hydroelectric resources of the province to provide an efficient, reliable and competitively priced source of electricity.

Over the last 27 years B.C. Hydro has developed the Columbia and Peace River systems in the province and has a total capacity of over 10,000 MW made up of 30 hydroelectric, 15 diesel, one thermal and two gas turbine facilities. Approximately 65 percent of this capacity involves two large generating stations on the Columbia River (Mica and Revelstoke) and two generating facilities on the Peace River (Peace Canyon and GM Shrum). To bring this power to its major customer base in the Lower Mainland, B.C. Hydro operates and maintains over 17,000 circuit km of transmission lines.

To date B.C. Hydro has only developed a small portion of the hydro and thermal electric generation potential of the province. It has been estimated that approximately 10,000 MW of power could still be developed on the Peace River System (Site C 900 MW), the Columbia River System (Keenleyside/Murphy 515 MW), the Iskut/Stikine River Basin (2900 MW), the Liard River Basin (3190 MW), the Hat Creek Thermal Project (2000 MW) and a number of other smaller hydro and thermal electric projects throughout the province. Substantial scope also exists for major energy savings through well managed conservation programs with B.C. Hydro's industrial, commercial and residential customers. Through careful choices and good management B.C. Hydro should be able to supply its growing customer base with reliable and competitively priced power well into the next century.

B.C. Hydro's current electricity rates are among the lowest in the world. Rates have decreased relative to the consumer price index over the last five years and B.C. Hydro remains well positioned, both in terms of efficiency and reliability of service, against other North American electric utilities. Unit cost performance has and will continue to be below the Canadian Electrical Association (CEA) average. B.C. Hydro also outperforms the CEA average for reliability as measured by the percentage of time that system power is available and by the number of outages per electric system customer.

In the past year the corporation has established a number of wholly-owned subsidiaries as vehicles to develop new business opportunities and to open up new market opportunities outside of British Columbia for other B.C. firms. They include Powerex which has a mandate to buy power from private power producers in B.C. and sell it into the U.S. market. Other subsidiaries include B.C. Hydro International (engineering and technology expertise), Powertech Labs (research and development services), Westech Information Systems (information systems and development services) and Western Integrated Technologies (computer processing and networking services). All of these companies have been given the mandate to joint venture with local private sector firms and use B.C. Hydro's international reputation to develop new market opportunities that might not otherwise be available to local companies.

In common with other public and private sector employers B.C. Hydro has recognized it can only achieve its goals with the support and assistance of its approximately 5000 employees. The corporation has therefore committed to a major corporate goal of being one of the best employers in B.C.



B.C. HYDRO INTEGRATED SYSTEM
TRANSMISSION ADDITIONS
TO YEAR 2000



B.C. HYDRO LOCATION MAP FOR MAJOR GENERATION PROJECTS

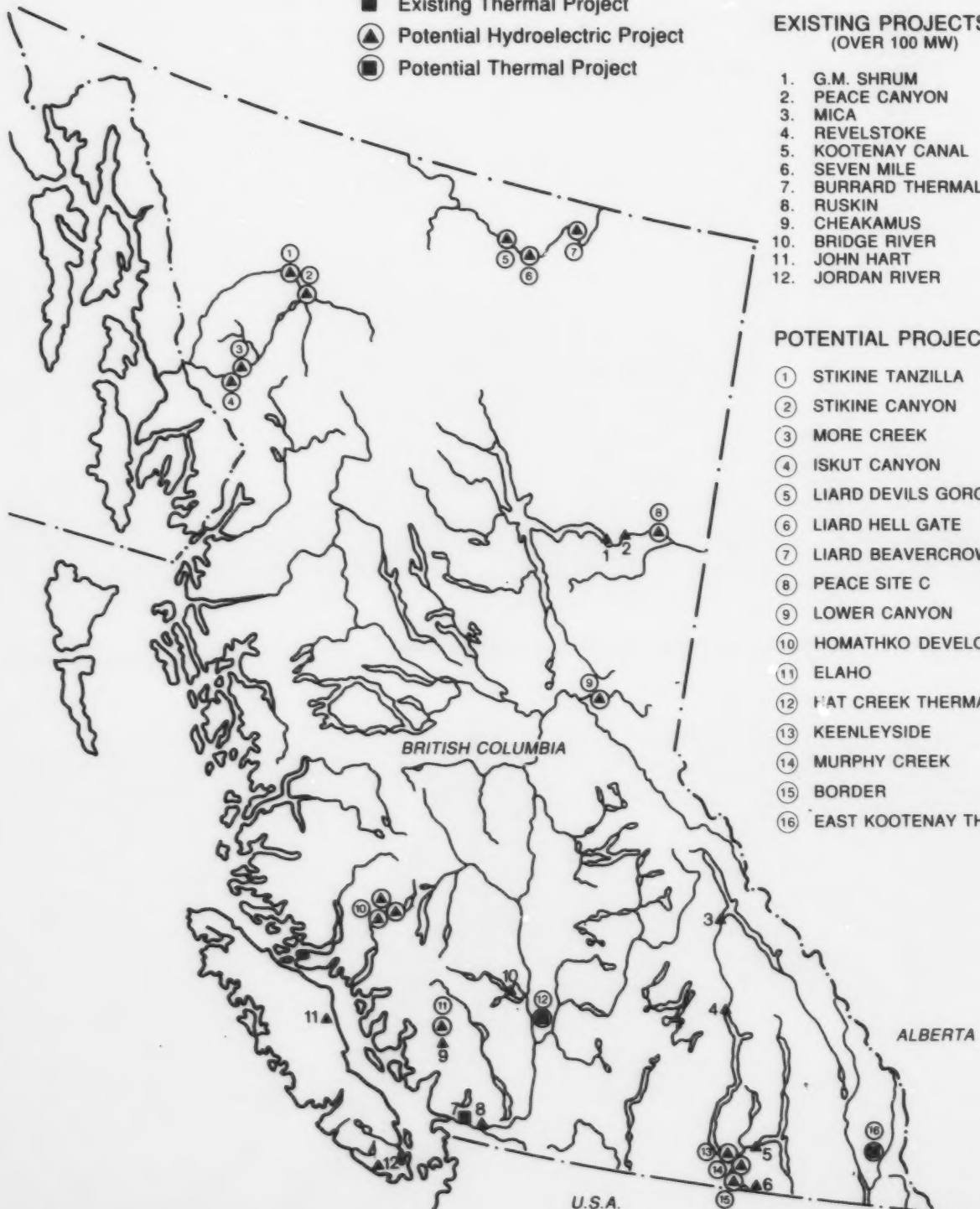
- ▲ Existing Hydroelectric Project
- Existing Thermal Project
- ▲ Potential Hydroelectric Project
- Potential Thermal Project

EXISTING PROJECTS (OVER 100 MW)

1. G.M. SHRUM
2. PEACE CANYON
3. MICA
4. REVELSTOKE
5. KOOTENAY CANAL
6. SEVEN MILE
7. BURRARD THERMAL
8. RUSKIN
9. CHEAKAMUS
10. BRIDGE RIVER
11. JOHN HART
12. JORDAN RIVER

POTENTIAL PROJECTS

- ① STIKINE TANZILLA
- ② STIKINE CANYON
- ③ MORE CREEK
- ④ ISKUT CANYON
- ⑤ LIARD DEVILS GORGE
- ⑥ LIARD HELL GATE
- ⑦ LIARD BEAVERCROW
- ⑧ PEACE SITE C
- ⑨ LOWER CANYON
- ⑩ HOMATHKO DEVELOPMENT
- ⑪ ELAHO
- ⑫ FAT CREEK THERMAL
- ⑬ KEENLEYSIDE
- ⑭ MURPHY CREEK
- ⑮ BORDER
- ⑯ EAST KOOTENAY THERMAL



PLANNING FRAMEWORK

B.C. Hydro is undergoing a period of strategic renewal and as part of that process it has substantially changed its organizational structure and planning philosophy and approach.

The company has been reorganized to establish three strategic business units—Production (the generation and transmission of electricity), Customer Service (the distribution of electricity to customers) and System Development (engineering services for planning, design and construction of the electrical system). There are three corporate service groups—Finance and Administration, Corporate and Environmental Affairs, and Human Resources. Over the next few years many of these corporate service functions will be decentralized to the strategic business units.

In addition, five wholly-owned subsidiaries have been created—Powerex (export marketing), BCHIL (marketing engineering services abroad), Powertech (research and testing services), Westech (information systems development) and Western Integrated Technologies (computer processing and networking).

The business planning process in B.C. Hydro requires each of these units to develop a strategic business plan and detailed operating plan and budgets for the year. The strategic plan focuses on how each unit will help to achieve B.C. Hydro's corporate mission statement and objectives. In addition, each unit assesses its strengths, weaknesses, opportunities and threats and develops unique strategies to address these areas. The detailed operating plans and budgets focus on the costs of every product and service produced as well as the factors impacting each unit's ability to effectively carry out the management of its business. In addition, as part of the planning process, each unit is required to develop a set of relevant performance measures for monitoring the progress made towards implementing its strategy. Ideally it is intended that these measures, in turn, flow down to setting performance standards for management compensation plans.

The Corporate Business Plan represents a summation of the detailed plans produced by the strategic business units and subsidiaries. It provides a company-wide view of all major strategic initiatives that are being implemented. The Plan also sets out the additional financial resources that will be required to implement these various strategic initiatives and incorporates them into a three-year financial plan.

This new planning process and philosophy will continue to evolve and mature in the coming years.

CORPORATE VISION

B.C. Hydro's mission, objectives, principles and values provide the framework around which the business plan of the company has been constructed.

Corporate mission

With the recent sale of its gas and rail divisions, the company is now focusing on its core business, the supply of electricity, and its original mandate of assisting in the economic development of the province.

Accordingly the mission of the company is:

"To support the economic growth of British Columbia through the efficient supply of electricity."

Corporate objectives

B.C. Hydro has established four corporate objectives in support of its mission statement:

- To maximize its contribution to the economic development of B.C.
- To be the most efficient utility in North America.
- To be recognized by our customers as a superior marketing and customer-service company.
- To be one of the best employers in B.C.

All corporate strategy is intended to align itself with and support the company mission statement by specifically aiming to achieve one of these four objectives. In addition, key performance indicators have been established to measure progress and success in achieving corporate objectives. These indicators are discussed and set out in a subsequent section of the document.

Corporate principles

Individual employees of B.C. Hydro share the following common principles:

- integrity
- commitment
- teamwork
- innovation

These principles create a working environment that is supportive of the mission statement and objectives and that promotes leadership and achievement by all employees.

Corporate values

B.C. Hydro's corporate values involve a respect for one another, our communities and our natural environment.

Corporate motto

Together all B.C. Hydro employees share a common united vision of the company's purpose and reflect this in a motto that says: Proud of Our Service.

CORPORATE ASSESSMENT

An important aspect of B.C. Hydro's strategic planning methodology for the 1990 planning cycle involved an assessment of the corporation's situation...where it has been, where it is now, where it will be in the future. In addition B.C. Hydro analyzed its strengths and weaknesses. This combined assessment helped establish a basis for the specific business strategies which have been developed.

In this decade B.C. Hydro has gone through a series of major changes, from a period of expansion and the development of new facilities, to a time of fiscal restraint compounded by a recession, and now to a time of growing demand and need for renewed development.

In the 1970s B.C. Hydro had committed to build the Revelstoke project in response to expected demand for electricity. The company was geared to a major construction program. However, the provincial economy of British Columbia was hit with a major recession in the early 1980s which changed B.C. Hydro's expectations of future electric demand. At the same time that the Revelstoke generating station entered into service B.C. Hydro found it had an energy surplus. The primary concern was changed to marketing the surplus in the export markets and domestically through discount energy programs. Concurrently with this surplus program, B.C. Hydro faced a period of restraint in which maintenance was reduced significantly, new projects delayed or deferred indefinitely and administrative support functions were constrained severely.

Recently electric demand has been exceeding expectations at five percent a year. In the next three years the hydroelectric system will approach resource balance, whereby the demand for electricity will approach the capability of the system to supply it. There will no longer be a surplus capacity and B.C. Hydro will have to turn to a number of alternative energy options including energy conservation, energy production efficiency measures, coordination with other producers, cogeneration, independent power production and new hydroelectric projects. As growth continues and new investments are required, B.C. Hydro has the opportunity to demonstrate leadership in the way it selects its supply strategy. In addition B.C. Hydro must retain the beneficial components of cost constraint while renewing its commitments to invest in adequate levels of maintenance and support necessary for the effective management of its system and people. This means that increases in operating costs and capital expenditures will be necessary to meet the growing demand and to improve the quality of the service to our customers.

Surplus staff levels became a serious issue in the early 1980s after the end of the Revelstoke construction project. Throughout most of this decade emphasis was placed on reducing staffing levels. The total complement was reduced from over 10,000 employees to the present core level of approximately 5,000. As a consequence of the restraint there was only minimal investment in staff training and development, recruitment, working environment, organization development and employee involvement. The morale of staff was low and effectiveness diminished.

In the future, additional effort will be required to carry out the new developments being undertaken by B.C. Hydro. In addressing this issue the company will need to define and maintain core staffing levels. To avoid the threat of such dramatic staff reductions in the future, it will need to contract for the additional resources. In the future the previous constraint on investing in the company's human resources would be counter productive. The challenge will be to determine the appropriate programs and levels of investment needed to maximize employee effectiveness. In addition to these challenges, new technological developments continue to become available at an ever increasing rate. Increased levels of training will be required to capitalize on the opportunities for improved productivity through application of this technology. As B.C. Hydro changes its focus from the restraint of the past to renewal of the workforce for the future, it will need to invest in enhancing the productivity of its most important asset, its employees.

In short, the current situation is one in which surpluses have been significantly reduced by restraint and in which there are many opportunities for B.C. Hydro to demonstrate leadership in setting new directions.

B.C. Hydro has a proven ability to supply reliable, efficient and competitive electrical energy. The company is also well positioned, through its sound financial position, world class engineering capability and highly skilled staff to maintain and enhance the existing electric system and to undertake major projects to meet future load demands.

B.C. Hydro has a need to better understand its stakeholders and improve relationships with them. Customers, the provincial government, bond holders, suppliers and remote communities all have expectations to which we must be sensitive. Establishing well defined business relationships and learning to operate under pressure from competitive markets will be necessary.

B.C. Hydro will continue to be vulnerable to changes in economic growth, interest rates and exchange rates as well as to weather and water flow conditions. The potential for catastrophe in the form of fire, storm, explosion or breakdown remain to be minimized. In the future dramatic changes in the prices of competing fuels, technological breakthroughs in new and existing methods of power generation, customer response to conservation and regulatory conditions could significantly affect B.C. Hydro's strategies. In addition, a new range of concerns about customer service, reliability of power, contribution to economic development, protection of the environment and involvement with communities and the public will all have a major influence on B.C. Hydro's strategies.

B.C. Hydro's financial position has improved significantly such that new operating and capital commitments can be met. With 23,000 new customers to serve each year being added to a base of 1.2 million, B.C. Hydro has the opportunity to plan for its vulnerabilities and address the new range of concerns it faces. By demonstrating leadership in the development of its products and services and demonstrating leadership within the community it can renew its strategies to approach the future.

The next section contains the strategies B.C. Hydro will employ to address its current situation, build on its strengths and overcome its weaknesses.

STRATEGIC INITIATIVES

In order to achieve its mission statement and objectives, B.C. Hydro has adopted a strategy of "leadership". Quite simply it plans to move towards the leading edge in all facets of its business.

The specific leadership initiatives that B.C. Hydro plans to implement have been categorized under four broad areas—product, supply, management and community leadership.

Product Leadership

B.C. Hydro's product leadership initiative focuses on three main areas—encouraging customers to use energy more wisely, developing new potential customers and opportunities, and striving for excellence in customer relations and service.

Energy conservation

To encourage customers to use energy more efficiently, B.C. Hydro has launched Power Smart. This broad-based, 23 program approach is aimed at reducing some of the future electricity requirements of industrial, commercial and residential customers. The effectiveness of this initiative will depend upon B.C. Hydro's ability to create a new awareness for better energy utilization. Education, economic incentives and technical advice will be the key vehicles used to effect customer change.

The total capital cost of the initiative will be \$225 million, phased in over a 10-year period. The fiscal 1990 cost component is budgeted at approximately \$19 million. The targeted energy saving from the initiative is approximately 2200 GW.h per annum by 1998. This saving is equivalent to approximately one-half of the annual output of the proposed Site C Project. In addition, B.C. Hydro's cost of saving that energy is only 1.0 cent per kW.h under the Power Smart program compared to 3.5 cents per kW.h for generating Site C energy.

New customers

B.C. Hydro has gone through an evolutionary phase, spinning off three new subsidiary companies. The new entities—Powertech Labs Inc., Westech Information Systems Inc. and Western Integrated Technologies Inc.—will market expertise accrued inhouse at B.C. Hydro. These skills, respectively, are in research and testing, computer systems development and computer processing capability.

The three companies are expected to generate combined revenues of approximately \$63 million through the efforts of their 425 employees in fiscal year 1990, making each company one of the largest of its kind in the Canadian market place. There will be a short-term transitional phase during which B.C. Hydro will continue to be their largest customer group.

An important objective for all of B.C. Hydro's subsidiary companies is to work cooperatively with local B.C. companies to develop new markets and customers. By using B.C. Hydro's name and expertise to open doors both in international and domestic markets, new opportunities are made available for B.C.-based companies.

Two other established B.C. Hydro subsidiaries, B.C. Hydro International Ltd., a company that markets engineering technology domestically and internationally will continue to develop new customers, while Powerex, a B.C. Hydro company charged with selling export power, will also be looking to expand the company's sales potential.

In addition, B.C. Hydro has embarked on an initiative to facilitate private sector power development to serve the export market through Powerex. Powerex has requested proposals from the private sector for the supply of 400 to 600 MW of electricity for the export market and significant interest has been shown by potential Canadian and foreign suppliers. In preparation for this new initiative, an export market study is being prepared and should be completed by this fall.

Powerex is currently negotiating a small development contract, based on a firm transmission basis, with California utilities and Bonneville Power Administration to test the viability of future export power deliveries.

Customer service

Another key initiative is to develop and maintain excellent customer service. The numerous components of providing quality service to customers have been carefully scrutinized by the company and performance standards coupled to aggressive action plans have been formulated. For example, specific capital has been committed to improving voice communications. The acquisition of new technology such as digital phone switching plus additional staff should improve the corporation's response time and reduce the caller's waiting period. The fiscal 1990 budget for this initiative is \$600,000.

Not only will customer queries be answered more quickly, but there will be a greater focus on improving customer perception of the quality of electricity (i.e. momentary voltage disturbances) and the impact it could have on their use of high-technology equipment.

Decentralization of functions such as claims and customer accounts should also improve customer service by providing more direct and immediate recourse on problems.

A major component of providing quality customer service is the recurring investment in new distribution lines and upgrading existing distribution lines to meet new load requirements. For fiscal 1990 the capital cost of these system extensions and improvements is budgeted at approximately \$100 million.

A strong emphasis will be placed on connecting customers in a more timely manner and thereby provide a springboard for long-term good customer relations. Specific action plans include employee training as well as improved internal methods for reducing connection times.

Finally, effective application of project management procedures will ensure that B.C. Hydro's industrial customers receive a quality product on schedule.

Summary

These product leadership initiatives directly contribute to meeting the key corporate objectives of superior customer service, efficiency and economic development.

Power Smart, better management of the communication interfaces with our customers and delivery of a consistently high-quality product in a timely and courteous manner will reinforce our commitment to service excellence.

The success of Power Smart, the new subsidiaries and the application of new service technology and procedures are important parts of our plan to become the most efficient utility in North America. Lastly, the activity represented in these initiatives especially that of fostering the growth of independent power for export, will contribute to the economic development of B.C.

Supply Leadership

Supply leadership within B.C. Hydro encompasses four broad areas—managing our resources more efficiently to ensure maximum output, a strong maintenance program to ensure system reliability, supplementing existing capacity with alternative energy supply and planning for future load growth.

Many of these areas include new and innovative approaches which are vital to meeting future load demands. The total fiscal 1990 capital investment needed to meet the load as well as maintain a reliable electric system, will be approximately \$134 million. This figure includes projects that involve generation (\$35 million), transmission (\$29 million), and substation facilities (\$19 million) plus numerous smaller project items.

Energy efficiency

Resource Smart is a broad program of energy initiatives targeted at maximizing the energy output from existing production, transmission and station operating facilities. Generating unit and substation upgrading or replacement, as well as better water level utilization and management, are some examples of future action plans under consideration. Studies will be completed in this year to identify which components of the system offer the best potential for additional output.

Current information indicates a potential to increase output by 4000 GW.h which is equal to approximately 10 percent of the domestic load. The targeted energy contribution by 1994/95 is 1400 GW.h per annum. Ongoing tailrace improvements during the 1990 fiscal year at the Revelstoke generating station, at a capital cost of \$3.6 million, are one example of B.C. Hydro's commitment to the Resource Smart program. This improvement alone could contribute 68 GW.h per year of additional power at a cost of 0.5 cents per kW.h.

Another example of more effective energy production management is the plan to bring the Burrard Thermal plant up to full operating levels to help meet future load demands. The objective is to optimize energy efficiency on the electric system, resulting in higher reservoir levels under normal stream flow conditions and increased energy for the export market. The firm energy capability of Burrard, based on firm as well as "valley" gas, is 5500 GW.h per annum.

The capital investment to bring Burrard Thermal up to full operating levels and to ensure it remains environmentally the "cleanest plant in North America" will cost \$1.6 million (\$1.1 million in 1989 and half a million dollars in 1990.) Planned studies will focus on reducing plant emissions and will support initiatives aimed at improving community awareness of air quality issues within the Fraser Valley. An additional \$4.0 million of operating expenditures will be allocated to the plant for fiscal 1990.

Maintenance catch up

To maintain a high level of system reliability B.C. Hydro is upgrading its system. A major thrust of this initiative is aimed at catching up on maintenance which was deferred during the recent era of restraint. The focus of this program will be on improving equipment availability and reliability and on the prevention of equipment damage, thus avoiding major capital repair expenditures.

In order to carry out this extensive maintenance program efficiently, a combination of both B.C. Hydro staff and outside contractors will be used. The additional budgeted catch-up maintenance costs for fiscal 1990 are approximately \$7.0 million. In addition, future production maintenance routines will be governed by the standards set out in the Production Facilities Management System (PFMS).

New steps are being taken to enhance security. A program is in progress to assist in auditing the B.C. Hydro system, identifying potential weaknesses and taking corrective action as required. Components in the program include the fire risk reduction initiative and the seismic task group study. Projected annual future capital costs are estimated at \$2.0 million.

Also, B.C. Hydro will continue to make significant investment, both in terms of studies and capital expenditures, in the well-established Dam Safety Program. The John Hart Dam upgrade is an example of B.C. Hydro's dedication to the program. The non-capital components of the program currently cost \$4.0 million annually.

Power partners

B.C. Hydro is exploring means of increasing power through a variety of partnerships with private producers, other utility companies and through cogeneration.

The corporation has requested proposals from independent power producers for the supply of 150 to 200 MW of electricity for domestic consumption. (Projects must be at least 5 MW in size.) The estimated long-term potential energy contribution, both for domestic and export use, is an estimated 2500 GW.h per annum or six percent of current domestic load.

Coordination agreements and power purchase agreements with other utilities and private industrial suppliers are being aggressively pursued, most notably with Bonneville Power Administration, Alcan and TransAlta Utilities Corporation. Contract negotiations with Alcan on its Kemano expansion are near completion. The estimated potential energy contribution of these initiatives is 7500 GW.h per annum or 20 per cent of B.C. Hydro's domestic load.

Also, B.C. Hydro will continue to encourage energy efficiency through cogeneration by purchasing from cogenerators or by assisting them to reduce their future energy demands. B.C. Hydro's planning studies project a potential energy contribution of up to 1400 GW.h per annum from cogeneration or three percent of its domestic load.

A \$35 million commitment to a major pulp and paper producer will help finance the installation of cogeneration equipment which will service new load requirements (750 GW.h) resulting from expansion of the mill facility. The cost of this initiative at 0.35 cents per kW.h compares favourably with the alternative of having to supply the new load requirements at a net marginal cost of 0.8 cents per kW.h.

Planning for future demand

To ensure that future transmission line right-of-way requirements in the Lower Mainland will be met, a major review of the potential for expansion of existing rights-of-way will be undertaken. Alternate routes will also be investigated.

Developing a plan to ensure an adequate supply of electricity for British Columbia for the next 20 years is a careful balancing act. While conservation measures and the use of other potential resources will likely delay proposed new generation projects, some new generating capacity may be required by the end of the decade.

The 20 Year Resource Plan identifies two new potential projects—the installation of generating equipment at the Keenleyside Dam along with the development of Murphy Creek on the Columbia, and the Peace Site C project.

Although the timing of the two projects is affected by several factors including load growth, power purchases and the success of the conservation initiatives, the estimated timeframe is for a 1998 and 1999 completion respectively. In fiscal 1990, \$7.0 million will be invested to bring both the projects to shelf ready status, in anticipation of this construction program. Another issue is the availability of downstream energy benefits from the Columbia River Treaty, which were sold to the United States for 30 years. These power benefits start to revert to British Columbia by stages beginning in 1998.

With an estimated lead time of 20 years for development of a major project, three alternative development options will be explored to meet the load demand beyond the year 2000. One scenario looks at hydroelectric projects, another focuses on thermal power sources and the third is a combination of supply and demand side management.

The hydroelectric option would involve the potential expansion into undeveloped river basins of southern and central B.C. as well as into the northern rivers of the Stikine and Liard. The thermal option would explore four or five fuel sources such as coal from Hat Creek and several different firing technologies.

Summary

Effective supply leadership is critical for optimizing the key corporate objectives of efficiency and contributing to economic growth within B.C.

Resource Smart, independent power production, cogeneration and coordination agreements, maintenance catch up, the energy contribution from Burrard Thermal and improvements to our existing plant are all integral to reaching B.C. Hydro's goal of becoming the most efficient utility in North America.

In addition, significant economic benefit to the private sector of B.C. will be manifested through the balanced use of outside contractors, especially in the areas of maintenance catch up, improvements to existing plant facilities and in independent power production.

Management Leadership

B.C. Hydro is committed to the principle of organizational decentralization. In addition, to be truly effective in achieving its corporate goals of efficiency and superior customer service it has taken steps to give employees greater autonomy and authority.

Plans are underway to decentralize much of the central finance and administration, purchasing, materials management, claims, customer accounting and personnel functions to the three main strategic business units. Wherever possible responsibility for providing services will be moved closer to the customer being served.

These changes will place new demands on B.C. Hydro management and employees. To ensure that staff is able to function within this new decentralized environment, B.C. Hydro's management initiatives address a renewed approach to Managing Smarter and Working Smarter. They also emphasize the professional development and skill enhancement of employees at every level in the organization.

Management leadership initiatives are targeted at four main areas—organizational structure, new technologies, asset utilization and human resources. Highlights of these areas are explained below.

Reorganizing for tomorrow

A plan is underway which will see B.C. Hydro sell its downtown Vancouver head office and lease back space for an interim period while it constructs and refurbishes new and existing office facilities throughout the province to accommodate a more decentralized organization.

With greater emphasis on field-based management the company will be continually exploring new opportunities to decentralize functions and identify any business unit activity which could best be provided by the competitive market place. This will help to contribute to B.C. Hydro's broader mandates of economic growth and development.

The corporation as a whole will continue to evolve into a flatter overall organization that allows for shorter lines of communication, delegation of authority, a broader scope of strategic planning, accountability for results and a strong sense of individual ownership within the company. A range of organizational effectiveness programs will be implemented with the goal of achieving individual employee ownership of and commitment to ongoing productivity gains and to assist managers and staff in reaching the objectives of the corporation.

There will also be a continuing commitment to further develop and refine the business unit/profit centre approach of management. Under this program, each organizational unit in B.C. Hydro is required to establish well-defined objectives, products, unit costs and competitive measures as part of annual management plans.

New technology

Key information systems initiatives are scheduled, including improvements in information management for all strategic business units and groups. Major enhancements are planned for the Customer Information Systems, Geographic Facilities Information Systems, Business Management Systems, Production Facilities Management Systems, Executive Information Systems and various other operations and engineering systems. These initiatives will involve \$20 million in capital plus an additional \$6.0 million in operating expenditures for fiscal year 1990. There will be a strong commitment, within B.C. Hydro, to explore new technologies that maximize efficiency. In addition, a technology plan will be developed to ensure the creation of effective computer and office technology solutions for all business units, while maintaining necessary compatibility and standards across the whole organization.

Asset utilization

B.C. Hydro will be critically evaluating any underutilized assets and divesting itself of these assets if they cannot fulfill a sustainable level of immediate or long-term need. These assets may include items such as surplus materials or land and buildings. B.C. Hydro's management initiative of better asset management will also be targeted at such operational areas as accounts receivable, bad debt, and costs associated with vehicle operation and ownership. In addition, efforts will be made to market the underutilized capacity of the corporation's microwave system.

Human resource initiatives

There will be a continuing commitment to deliver a wide range of programs that enhance skills, employee training and development, productivity and management capabilities. Special emphasis will be placed on trade skills and related apprenticeship programs. The total annual training budget will be increased from \$4.0 million to \$12 million or from two percent to six percent of total employee compensation. The development of a multi-skilled, motivated and mobile workforce is the goal, through appropriate recruitment, career management, effective relocation assistance and other human resources planning measures.

Since a significantly high percentage of B.C. Hydro's employees are over 40 years of age, a major thrust of the new programs will be recruiting younger employees to balance the internal company demographics and ensure continuity of workplace knowledge and skills in the future. There will also be a renewed focus on placing more women in management.

Employee safety initiatives will be undertaken, which will include an inventory of skills along with the necessary safety upgrading where required. In addition, a program of quality assurance involving on-site inspections, first-line investigations and safety audits will be implemented.

A strong emphasis will be placed on ensuring that compensation and benefit levels are competitive with industry and community standards so that B.C. Hydro is able to attract and retain top-quality management and operating personnel.

Summary

Management leadership strategic initiatives focus primarily on contributing to two corporate key objectives. First, the objective of efficiency will be realized through a range of human resource planning, development and management measures, and through improved organization effectiveness in terms of business structure. In addition, new information systems applications are expected to achieve overall gains in operating efficiency.

Second, the corporate objective to be one of the best employers in B.C. will be met through new or expanded initiatives in the areas of employee safety, individual skills assessment and training, career opportunities through mobility and attention to improving the working environment and overall quality of working life.

Community Leadership

B.C. Hydro has a strong set of values regarding the natural environment, public safety and community involvement. The corporation will strive to achieve a position of leadership in the communities it serves through the following range of initiatives that parallel these concerns.

Environmental objectives

B.C. Hydro's environmental program will be expanded and strengthened to reflect the company's approach to minimizing adverse effects of operations on the environment. B.C. Hydro is committed to addressing the environmental and social implications of the potential projects presented in its long-range resource plans.

As well, the company is committed to continued enhancement of the recreation and tourist facilities at its reservoir and dam sites around the province.

B.C. Hydro is contributing, where appropriate, to the cost of placing existing electric services underground for environmental or aesthetic reasons or in response to community redevelopment projects. Funds allocated for this effort amount to \$1.5 million in the fiscal 1990 budget.

Safety

The company's continuing commitment to improve public safety will remain a prime objective. In addition to a number of on-going public awareness campaigns, several new programs are planned including a public safety display at Science World in downtown Vancouver. The overall objective is to reduce accidents where the public has come in contact with electricity by 10 percent for each of the next five years.

Emphasis will also be placed on improving B.C. Hydro's already excellent safety record for employees. B.C. Hydro has the same Workers Compensation Board rating as that of employees working in a doctor's office. In addition, for the 1988 calendar year, B.C. Hydro had 8.5 disabling injuries per million man hours worked, which is the third best rating of the 14 utilities rated. However, the long term goal is to have an injury free workplace, and action will be taken to improve on our current record.

Community involvement

On all levels, B.C. Hydro will be moving towards becoming a stronger community participant. Emphasis will be placed on establishing business partnerships with B.C. businesses through the company's Team B.C. philosophy and company subsidiaries such as B.C. Hydro International Ltd. There has been an acceptance by the B.C. consulting community that B.C. Hydro International Ltd. is a partner—not a competitor—in bidding for and carrying out work in Canada and internationally.

B.C. Hydro's unique electric utility engineering experience, together with broad-based, private sector engineering and manufacturing expertise, is a potent combination for competition on the international market. This private sector and public sector partnering approach will also be applied to Westech Information Systems Inc., Western Integrated Technologies Inc. and Powertech Labs Inc. in order to encourage a spirit of cooperation with similar firms in the local marketplace.

B.C. Hydro will align its purchasing practises to encourage the purchases of goods and services from British Columbia suppliers. As well, B.C. Hydro will be moving towards greater use of private contractors provided that the quality of service needed can be obtained from the private sector.

B.C. Hydro will continue to support system expansion through contributions to the Rural Electrification (RE) program which provides financial assistance for construction of extensions to serve people living and working in rural areas where electricity is not readily available. The fiscal 1990 expenditure is budgeted at \$1.5 million.

Also, advisory committees have been established at the Board level, such as those for the Columbia and Peace areas, to provide valuable local input to Board decisions. This recognizes B.C. Hydro's commitment to being responsive to those local communities affected by B.C. Hydro's large generation and reservoir facilities.

Working with the community also will mean contributing to its social growth. B.C. Hydro is currently reviewing its corporate donations policy to ensure that it meets community standards and needs. A number of employee involvement initiatives will be centered around pensioner activities, recognition awards, community service funds, charity drives and employee associations. Furthermore, B.C. Hydro will support employees in their participation in fund-raising and charitable organizations, in community service clubs, and on community volunteer boards of directors.

The company recognizes the importance of keeping the public fully informed of all relevant B.C. Hydro activities and plans open channels of communications through all management levels. Public consultation will be incorporated into B.C. Hydro's decision-making process wherever possible.

Finally, B.C. Hydro will continue to provide a fair return on public investment to the company's major stakeholders, the people of B.C. The company already makes a significant contribution to provincial government revenues through water rentals paid on water stored and used for generation, school taxes, annual grants in lieu of property taxes and in the future, dividends. The budgeted fiscal 1990 contribution amounts to \$423 million or 25 per cent of total revenues.

Summary

B.C. Hydro makes a major commitment to economic development in the province simply through its operations in British Columbia and its contributions to provincial and local government revenues. However, spurring economic growth within the province will also be realized through community ventures such as Team B.C. which will place B.C. Hydro companies in partnership with the private sector. At the same time the company will be developing its local supplier and contractor program. One of the key dimensions of customer service is to be perceived as a good corporate citizen. B.C. Hydro's attention to environmental matters, a continuing commitment to public safety, enhancement of recreation and tourism facilities plus corporate donations and other community leadership initiatives all help to achieve the corporate objective of customer service excellence.

Resource Allocation

It was on the basis of the preceding leadership initiatives that financial resources were allocated for the 1989/90 fiscal year.

An additional \$58 million has been allocated to the operations, maintenance and administration budget for 1990 to implement the strategies as outlined in the table following. This includes \$44 million for specific new initiatives and \$14 million to accommodate general labour and material inflation.

The increase is particularly large in the first year due to a large number of one time expenditures such as the special studies for Site C and Keenleyside (\$7.0 million) and one time catch up in preventative maintenance. As a result, expenditures are expected to show little increase in the immediate following years.

Capital expenditures for 1989/90 are planned at \$356 million up significantly from the \$210 million capital expenditure recorded last year, but still well below the spending levels of earlier years. As shown in the table these capital expenditures are necessary to ensure an adequate and reliable supply of energy as the company moves into resource balance.

In previous years where B.C. Hydro had surplus generating capacity it could defer preventative maintenance and system reinforcement as the consequences were not serious. However, as the company moves into resource balance it cannot afford any outages or failures in the system without severely affecting its customers. Also, in order to serve the rapidly growing number of new customers significant expenditures will be required to expand and upgrade the electrical system.

Even with these higher levels of spending, B.C. Hydro's unit costs will remain relatively flat over the next three years and remain well below those of other utilities. Moreover, it is expected that the increased expenditure on staff training and new technologies will produce significant productivity savings in future years and reduce the need for significant staff increases that would otherwise be required to serve the increasing number of new customers being added to the system. B.C. Hydro currently has the highest customer to staff and output to staff ratios of any utility in Canada.

Financial resource allocation

Fiscal 1990
Additional Operating Expenditures Allocation
(in millions)

Product leadership	
- Increased research and development expenditures	\$ 2
Supply leadership	
- Major production maintenance catch up	7
- Additional resource studies (Site C/Keenleyside/IPP)	7
- Operation of Burrard Thermal generating station	4
Management leadership	
- Increased training emphasis	8
- Increased utilization of computer technology	6
- Office building initiatives	4
- Other assorted initiatives	3
Community leadership	
- Increased expenditures on public safety and environmental issues	3
Additional resource allocations	44
Increase to base operations for inflation	14
Additional labour/material costs	\$ 58

Fiscal 1990
Capital Expenditures Allocation
(in millions)

Product leadership	
- Recurring capital (i.e. customer additions)	\$ 101
- Power Smart program	19
- Stewart Integration	9
- Dunsmuir/Gold River transmission line	15
- Other projects	6
Supply leadership	
- Dam safety programs	23
- John Hart Generating Station	9
- American Creek Capacitor Station	11
- Other system plan projects, etc.	69
Management leadership	
- New facilities and improved working environment	34
- Computer systems, equipment	20
- Vehicles	14
- Other tools, equipment etc.	22
Community leadership	
- Beautification, RE and recreational sites	4
Total capital expenditures	\$ 356

FINANCIAL PLAN

In support of its business strategy, B.C. Hydro has developed a comprehensive three year financial plan which incorporates the following main features:

- implementation of an appropriate pricing strategy for electricity which complements B.C. Hydro's conservation efforts and provides for overall predictable rate increases over several years that are below the rate of inflation;
- generation of sufficient funds to implement B.C. Hydro's strategic operating and capital initiatives without increasing overall debt;
- unit cost performance equal to or better than current levels;
- provision for an appropriate return on public investment through the payment of annual dividends to the provincial government.

Revenue

Over the past three years domestic demand for electricity has grown by approximately five percent per annum compared to a forecasted growth rate for this period of 2.8 percent. This higher level of growth is expected to continue into 1989/90 at 4.6 percent and then drop in the two subsequent years to an average of 2.4 percent as the economy slows.

Base revenues, before rate increases and excluding export revenue, are expected to increase by approximately 3.6 percent in the first year and slow in the two subsequent years to an average of 1.8 percent. Revenues will not grow in the same proportion as electricity sales volumes in fiscal 1990 due to a number of non recurring revenues being received in fiscal 1989. In future years the lower rate transmission and general categories are expected to grow at a faster pace than the higher rate residential categories

resulting in revenues growing slower than total electricity sales.

The following initiatives will be implemented to provide additional revenues:

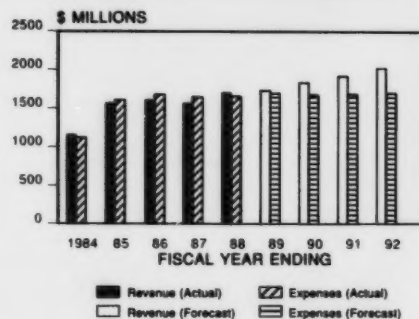
- Sale of surplus assets (land, buildings, and materials) will continue.
- Efforts will be made to implement or enhance user charges for those customer services currently not recovering their costs.
- Every opportunity will be taken to increase export profits, through the purchase and sale of energy.
- Rate increases will be sought at a maximum of three percent per year for three years, well below the rate of inflation. The increases will help to promote energy conservation and complement the Power Smart program. Small consistent rate increases over several years will avoid the need for large periodic rate increases when higher cost generation is added to the system in future years. The predictability of rates will also assist industry in its financial planning for future energy intensive projects.

Expenses

Total expenses, excluding finance charges, are forecasted to increase by 16.3 percent in fiscal 1990 and then pull back to increases of only 5.5 and 4.3 percent in each of the two subsequent years. Over the entire three year period expenses will increase on average by approximately 8.5 percent per annum, compared to a forecasted average annual inflation rate of 4.5 percent. The large increase in the first year is due to a number of one time expenditures for preventative

maintenance and the studies needed to bring Site C and Keenleyside to a shelf ready status. Unit costs for the three-year period are expected to remain virtually unchanged and remain well below other utilities.

Total Electric Revenues and Expenses



Finance charges

Finance charges will drop significantly from \$872 million in fiscal 1989 to \$752 million in 1990. This reflects the elimination of \$80 million in one time defeasance costs recorded in fiscal 1989. It also reflects a full year's interest earnings on funds received from privatization only halfway through last year.

The following finance strategy will be followed:

- Short term financing will continue to be used for any required financing until long term interest rates decline to more acceptable levels.
- Exposure to foreign exchange risk will continue to be reduced.

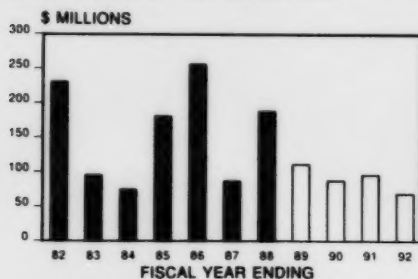
It is forecast that both long and short term rates will fall significantly over the next two years. Short term rates are expected to decline to an average of 10.7 percent in 1990, 10 percent in 1991 and 9.0 percent in 1992. This will result in a decline in finance charges which will be offset partially by increased costs caused by a forecasted decline in the value of the Canadian dollar

to 81 cents by March 31, 1990 and to 80 cents for the following two years.

Net export income

Net export income is forecast at \$30 million for fiscal 1990 increasing to \$37 million in 1991 and decreasing to \$20 million in 1992. Sales will be essentially from a small surplus of electricity that may result through a combination of Burrard operations and improved water levels, together with the purchase and resale of electricity from private generators in B.C. and Alberta. Surplus electricity is forecast for export sales in fiscal 1990 and 1991, however this source will not be available in 1992 as B.C. Hydro moves into resource balance. All remaining reserves in the rate stabilization account (\$23 million) will be transferred to income in fiscal 1990.

Gross Revenues from Export Sales



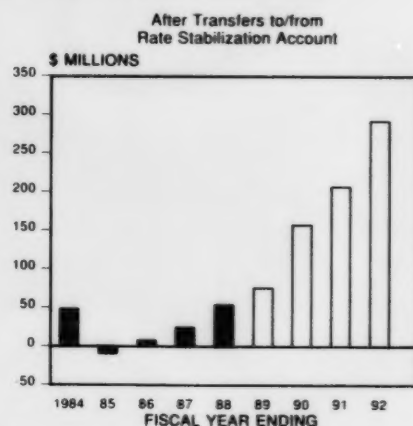
Net income

Based on the foregoing, net income before rate increases is forecast at \$129 million in fiscal 1990, \$114 million in 1991 and \$128 million in 1992 for a total of \$371 million across the three year plan.

Rate increases, assumed at a maximum of three percent per year, will contribute an additional \$290 million over the three year period. Consumers will be protected by ensuring rate increases are held to at least one percentage point below the rate of inflation. It is important to note in this regard that B.C. Hydro's current rates are among the

lowest in the world and it is B.C. Hydro's strategy to maintain this competitive position in the future.

Net Operating Income/Loss



Dividends

The provincial government currently has over \$1.7 billion invested in B.C. Hydro on which it has never earned a dividend. The plan reflects a proposed dividend of \$130 million, \$170 million and \$200 million respectively in the fiscal years 1990 to 1992. This represents an average annual rate of return on equity of just under 10 percent.

Capital expenditures

Capital expenditures are forecasted at approximately \$350 million a year for the next three years. Spending is divided almost equally between system capital, recurring capital and specific capital.

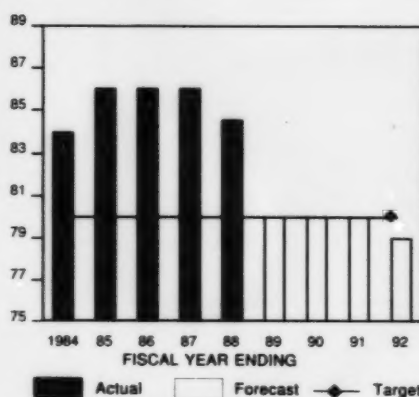
Change in debt/equity

Total net debt, after foreign exchange translation, will increase by \$79 million over the three year period. Of this amount, \$72 million is due to the forecasted decline in the Canadian dollar against the U.S. dollar to 80 cents by 1992.

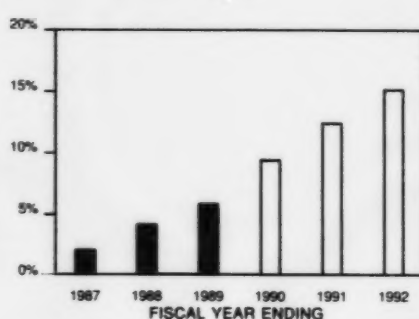
Over the three year period equity will increase by approximately \$200 million from retained earnings net of dividend payments and customer contribution.

As a result, the current debt to equity ratio of 80/20 will remain unchanged in fiscal 1990 and 1991 and decline to 79/21 by 1992.

Debt to Equity Ratio



Rate of Return on Equity



BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
STATEMENT OF NET INCOME
(years ending March 31)
(in millions)

	1989 (estimate)	1990	1991 (forecast)	1992
REVENUES				
Residential	\$ 588	\$ 605	\$ 615	\$ 625
General	579	580	593	613
Transmission	397	415	435	445
Other	96	119	76	96
Total	1,660	1,719	1,719	1,779
Cost of energy	212	233	213	217
GROSS MARGIN	1,448	1,486	1,506	1,562
EXPENSES				
Operation, maintenance and administration	261	319	325	334
Taxes	80	101	118	128
Depreciation	225	238	251	262
Finance charges	872	752	735	730
	1,438	1,410	1,429	1,454
OPERATING INCOME (LOSS) FROM DOMESTIC OPERATIONS	10	76	77	108
Export operating income	57	30	37	20
Other (1)	19	23	0	0
NET INCOME before rate increase	86	129	114	128
Rate increase revenue (2)	—	35	101	154
NET INCOME	\$ 86	\$ 164	\$ 215	\$ 282
DIVIDENDS	—	130	170	200

Notes:

- (1) Other income includes income from discontinued operations and rate stabilization transfers.
- (2) Rate increases are assumed at 3.0 percent annually effective July 1, 1989, April 1, 1990 and April 1, 1991.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
BALANCE SHEET
(as of March 31)
(in millions)

	1989 (estimate)	1990	1991 (forecast)	1992
FIXED ASSETS				
Fixed assets in service	\$10,608	\$10,900	\$11,158	\$11,393
Less accumulated depreciation	2,520	2,767	3,024	3,293
	8,088	8,133	8,134	8,100
Unfinished construction	157	194	233	349
	8,245	8,327	8,367	8,449
CURRENT ASSETS				
Temporary investments	71	21	39	15
Accounts receivable	314	272	282	291
Materials and supplies	40	44	44	44
Prepaid expenses	47	48	49	50
Property held for sale	25	10	10	10
	497	395	424	410
DEFERRED CHARGES				
Foreign currency translation	114	160	190	186
Debt discount and issue costs	42	42	41	42
	156	202	231	228
TOTAL ASSETS	\$ 8,898	\$ 8,924	\$ 9,022	\$ 9,087
LONG-TERM DEBT	\$ 6,774	\$ 6,874	\$ 6,897	\$ 6,853
CURRENT LIABILITIES				
Accounts payable	183	152	160	168
Accrued interest	290	217	217	215
	473	369	377	383
DEFERRED CREDITS				
Rate stabilization account	23	0	0	0
Deferred revenue	34	46	61	77
Contributions from Columbia River Treaty	332	322	313	304
Contributions in aid of construction	346	364	380	394
	735	732	754	775
PREFERRED FUNDS	235	235	235	235
RETAINED EARNINGS	681	714	759	841
TOTAL LIABILITIES and EQUITIES	\$ 8,898	\$ 8,924	\$ 9,022	\$ 9,087

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
STATEMENT OF CHANGES IN FINANCIAL POSITION
(years ending March 31)
(in millions)

	1990	1991	1992	Total
	<u>(forecast)</u>			<u></u>
ELECTRIC OPERATIONS				
OPERATING ACTIVITIES				
Operating Income	\$ 141	\$ 215	\$ 282	\$ 638
Less: Dividends	(130)	(170)	(200)	(500)
Depreciation	238	251	262	751
Other	(23)	23	24	24
Funds provided by operating activities	<u>226</u>	<u>319</u>	<u>368</u>	<u>913</u>
INVESTING ACTIVITIES				
Fixed asset expenditures	(356)	(330)	(388)	(1,074)
Contributions in aid of construction	<u>34</u>	<u>33</u>	<u>31</u>	<u>98</u>
Funds used for investing activities	<u>(322)</u>	<u>(297)</u>	<u>(357)</u>	<u>(976)</u>
NET DECREASE (INCREASE)				
IN FINANCING REQUIREMENTS				
	<u>(96)</u>	<u>22</u>	<u>11</u>	<u>(63)</u>
FINANCING ACTIVITIES				
Borrowings	730	290	380	1,400
Retirement of long-term debt	(570)	(169)	(278)	(1,017)
Sinking fund—income reinvested	<u>(114)</u>	<u>(125)</u>	<u>(137)</u>	<u>(376)</u>
Funds used for financing activities	<u>46</u>	<u>(4)</u>	<u>(35)</u>	<u>7</u>
NET FUNDS INCREASE/ (DECREASE)				
	\$ (50)	\$ 18	\$ (24)	\$ (56)

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
FORECAST OF CAPITAL EXPENDITURES
 (years ending March 31)
 (in millions)

	1990	1991	1992
	(forecast)		
ELECTRIC SYSTEM PLAN:			
Hydro facilities			
- Dam Safety rehabilitation/ remedial work	\$ 23	\$ 20	\$ 17
- John Hart G.S.	9	14	6
- Revelstoke Additional Energy Program	3	3	4
Transmission			
- Dunsmuir x Gold River 230 KV T/L	15	0	0
- Stewart Integration	9	0	0
- Williston x Kelly Lake 500 KV T/L	3	4	19
- Kelly Lake x Cheekye 500 KV T/L	2	5	9
Substations			
- American Creek Capacitor Station	11	6	0
- Lantzville Sub	4	4	0
- Nelway Sub	3	4	0
- Selkirk Sub	1	10	0
System Control Centre	1	6	20
Peace Site C/Keenleyside	0	1	7
Other electric system plan projects	50	41	50
TOTAL ELECTRIC SYSTEM PLAN	134	118	132
RECURRING PLANT	101	96	104
OTHER SPECIFIC EXPENDITURES:			
- Power Smart Program	19	21	33
- Vehicle additions	14	8	8
- Building/recreational facilities	11	10	7
- Major computer systems/ PCs/projects	20	12	12
- Tools, equipment, furniture, machinery, etc.	22	14	10
- Head Office refurbishing	5	0	0
- Head Office furniture	14	0	0
- New Head Office buildings (downtown and suburban)	5	49	80
- Capital for subsidiaries	5	2	2
- High voltage/high power lab	6	—	—
TOTAL CAPITAL EXPENDITURES	\$356	\$330	\$388

PERFORMANCE TARGETS

Accountability is an integral element of any plan. Therefore a number of key performance indicators have been developed to measure how well B.C. Hydro is doing in meeting its goals and objectives. These measures have been selected from the plans formulated by the three strategic business units, the three corporate groups and over 100 key business units. The aim is to focus on the critical elements B.C. Hydro is seeking to change.

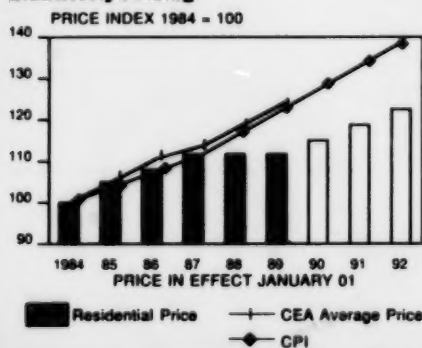
The list below is not meant to be limiting or exhaustive. New measures are constantly under development and enhancements will be made to existing KPIs as information and accuracy in assessment improves.

Economic Development

Electricity pricing

B.C. Hydro's goal is to achieve through the regulatory process a maximum 3.0 percent per annum electricity rate increase for the next three years. The intent is to maintain rates below the projected rate of inflation. This pricing strategy will encourage conservation, provide price certainty to customers and avoid rate shocks as higher cost plant is brought on line.

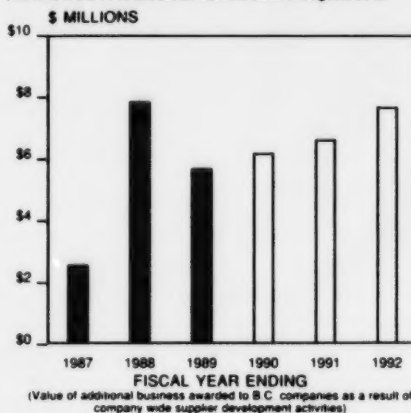
Electricity Pricing



Purchasing in B.C.

Through its supplier development program, B.C. Hydro will be encouraging greater purchasing from provincial companies. A 10 percent growth rate will be targeted.

Business Awarded to B.C. Companies

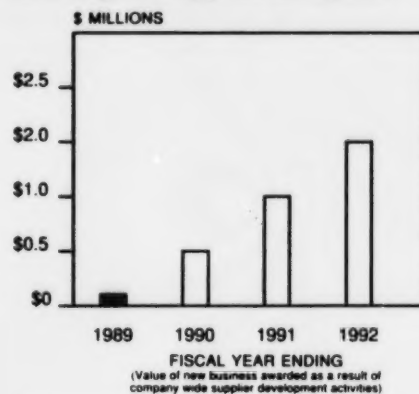


Of equal interest is the value of the contracts awarded to B.C. suppliers, because of the value-added tender evaluation policy. Also of interest is the economic value of new investment and business created from Hydro development activities. Increasing the number of local/regional suppliers is a new objective. The goal is to double the value of business awarded locally each year.

Business Opportunities for B.C. Suppliers



Local/Regional Supplier Participation

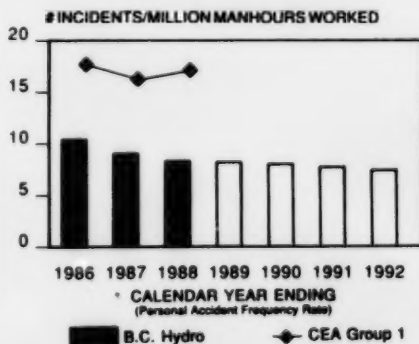


Best Employer

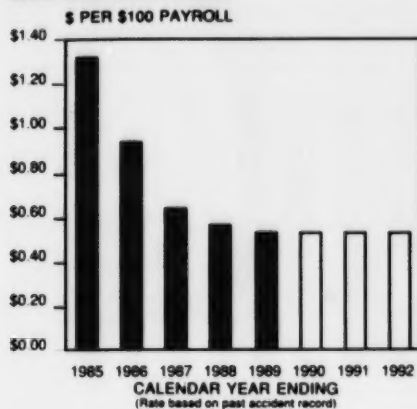
Employee safety

B.C. Hydro's goal is to provide a safe work environment for employees and maintain or lower its Workers Compensation Board assessment rate. Currently, the assessment rate, which is 56 cents per \$100 of payroll, is equivalent to that of school boards and is considered very favourable for an electric utility. The CEA Disabling Accident Frequency rate is used by B.C. Hydro when measuring employee safety as a key performance indicator. For 1988 (CEA reports on a calendar year), B.C. Hydro received a rating of 8.5 disabling accidents per million man hours worked which is the third best rating among Canadian electric utilities.

Disabling Accident Frequency



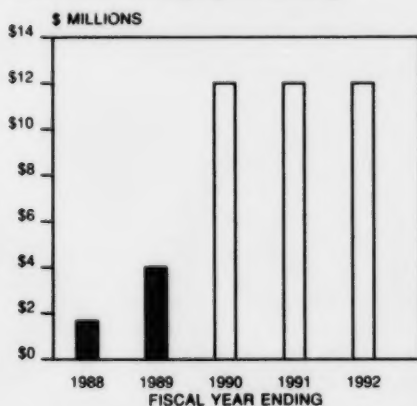
WCB Assessment Rate



Training and development

The goal is to allocate six percent of the payroll on an ongoing basis towards training and development. Critical to our success is continual updating and introducing new skills to the existing workforce as technology improvements are implemented.

Investment in Employee Training



Efficiency

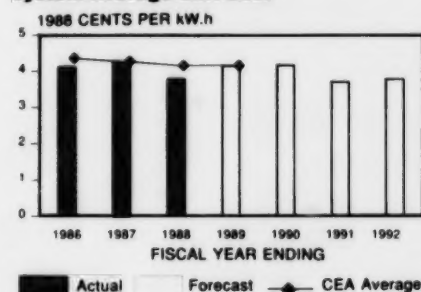
Average unit costs

B.C. Hydro's goal of becoming the most efficient utility in North America hinges upon its ability to lower its system average annual costs relative to other utilities over the long term. The Canadian Electrical Association (CEA) annual indices are used to compare B.C.

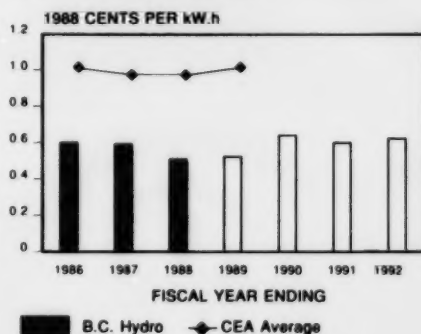
Hydro's performance relative to other major Canadian utilities.

The unit cost graph for the entire system includes the operating, maintenance and administrative (OM&A) costs plus those associated with fuel, taxes and capital costs. The System Unit cost is expected to decline over the next three years. The OM&A unit cost in isolation is forecast to increase slightly during the 1990 to 1992 period but will remain well below the CEA average of approximately \$.01 per kilowatt hour.

System Average Unit Cost



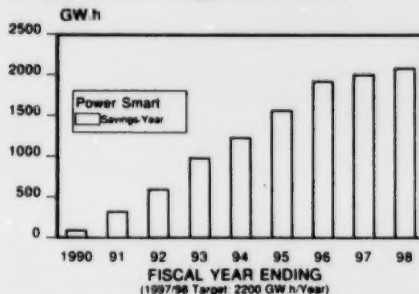
Operating, Maintenance and Administration Unit Cost



Power Smart

The projected energy contribution of the Power Smart program by year 1998 is targeted to be 2200 GW.h per year. The purpose of the Power Smart program is to minimize short and long-term energy costs through the efficient use of electrical energy.

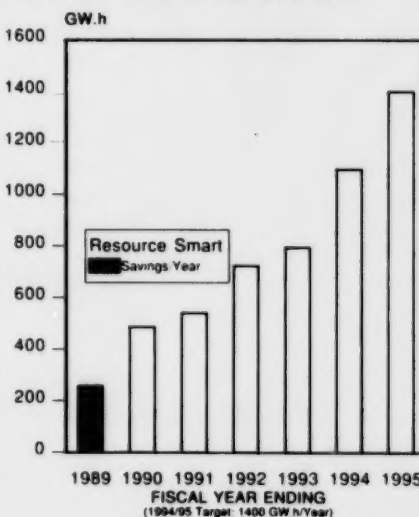
Power Smart Energy Contribution



Resource Smart

The long-term goal is to reach by 1994/95 fiscal year, a saving of 1,400 GW.h per annum. Resource Smart concentrates on increasing the energy available from existing facilities. Contributions will be made in all functions—generation, transmission and distribution.

Resource Smart Energy Contribution



Customer Service

Customer satisfaction

Customer service surveys are conducted on a regular basis. The last province-wide survey in January 1989 gave B.C. Hydro an overall quality of service rating of 7.5 out of 10. The goal is to raise our service rating average by 0.1 for the next five years. B.C. Hydro's performance is measured on 12 components of service.

QUALITY OF SERVICE LEVEL COMPONENTS

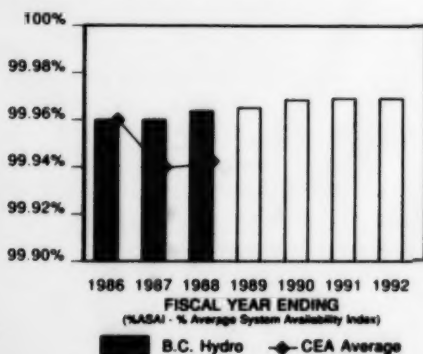
- Keeping electricity rates reasonable
- Encouraging public and customer input in decision-making
- Operating with the best interests of the British Columbia public in mind
- Keeping you informed about BC Hydro activities in your local area
- Being a good corporate citizen
- Handling customer inquiries, complaints in an efficient, prompt, courteous manner
- Keeping customers well advised of any changes affecting rates, billing procedures, service, etc.
- Demonstrating a conscientiousness and concern for safety of the general public
- Providing information on or assistance concerning how to use electricity more efficiently or cost effectively
- Ensuring there will be a reliable/dependable supply of electricity, that is, power will be available when you want it
- Having simple, clear, easy to understand billing procedures
- Speed in restoring power when an outage arises

Reliability

Reliability is simple to measure—how often do the lights go out and for how long? B.C. Hydro is proud to operate one of the most reliable electric systems in the world.

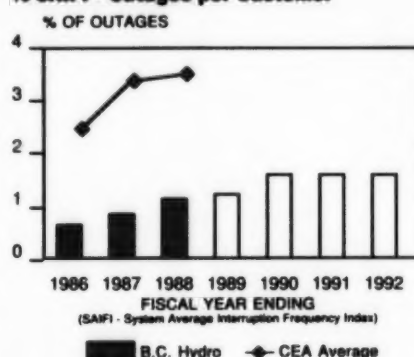
ASAI measures the percent of time power is available. The goal is to maximize the amount of time that power is available to customers. The target is 99.9685 percent by March, 1990 and 99.97 percent by March 1991, and to maintain this service level for the next five years.

% ASAI - % Time Power is Available



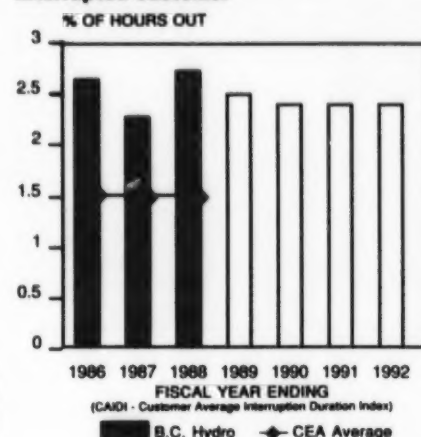
SAIFI measures the number of outages per electrical customer on the system. For reporting purposes, B.C. Hydro-planned outages and those of less than five minutes in duration are excluded from measurement. B.C. Hydro's goal is to keep the interruption frequency at less than half the CEA national average or below 1.57 by March 1990 and to remain so over the next five years.

% SAIFI - Outages per Customer



CAIDI measures the number of hours out per interrupted customer. At December 1988, the average length was 2.85 hours, compared to the Canadian Electrical Association average of 1.52 hours. The 1989/90 goal is to reduce our interruption duration index to 2.43 hours and maintain it for the next five years. While this may seem high, it is important to note that B.C. Hydro crews are frequently faced with conditions that are both hazardous and difficult due to wide variations in weather and terrain. Often great distances are a contributing factor.

% CAIDI - Hours of Outage per Interrupted Customer

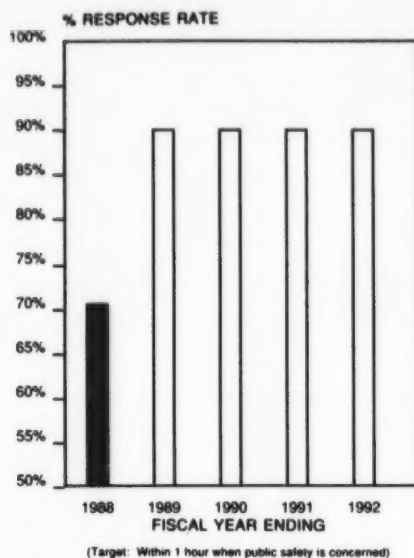


Response

B.C. Hydro's goal is to respond to 90 percent of emergency-rated, trouble calls affecting multi-customers within an elapse time of one hour. Emergency calls are considered those where public safety is a factor. A target response time of two hours has been set on other urgent calls.

As noted in the last public survey, B.C. Hydro is aware it needs to improve its response time to telephone callers. Of the approximate 1.5 million customer enquiry calls it receives, just over half are handled at the Lower Mainland Customer Enquiry Centre, located at Burnaby's Deer Lake. Currently, half of the calls are answered within 60 seconds. The goal is to reduce telephone response time to less than 45 seconds by March 1990. Telephone response time will be tested in other major centres in 1989/90.

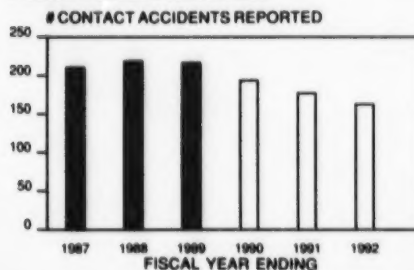
Trouble Call Response Time



Public safety

The goal is to reduce public electric contact accidents by 10 percent per annum for each of the next five years. Keeping B.C. Hydro customers safe when working with or around electricity is a critical customer service initiative. Public safety will receive even greater emphasis in 1989/90 with existing public programs re-emphasized and new programs developed when required.

Public Contact Accidents



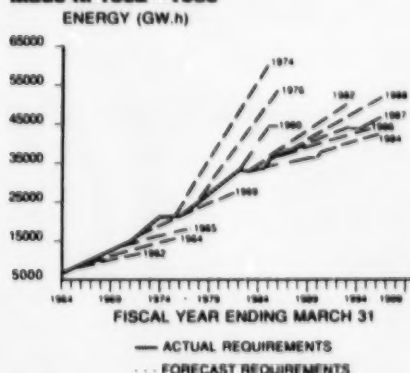
KEY PLANNING ASSUMPTIONS

Economic assumptions

The recent B.C. budget, commenting on the province's economic climate, states that "momentum built up in key areas of the economy after two years of strong economic growth will ensure continued economic expansion, although external factors are likely to moderate growth". A major risk to B.C. Hydro's forecasting is the possible response of monetary authorities to inflation. If interest rates escalate rapidly as a means of curbing inflation the North American economy could slowdown or stall.

B.C. Hydro has assumed in formulating its forecasts that current monetary policy will eventually dampen interest rate increases and result in a decline in inflation. This will prompt an interest rate decline across the three-year planning period. Near-term interest and foreign exchange rate forecasts used in the forecast are consistent with expectations of the investment community as a whole.

Gross Electric Requirements Comparison of Actual with Forecast Made in 1962 - 1988



Load forecast summary

Corporate strategies were developed based on the October 1988 B.C. Hydro Electric Load Forecast.

Domestic energy consumption for fiscal 1989 approached 38,000 GW.h on a population base of approximately three million. For the next three years, domestic load growth is forecast to average 3.1

percent annually. The major increase is in the transmission sector which is being driven by the expansion in the pulp and paper industry. The following table summarizes domestic sales (in GW.h) for the past two years and the forecast period.

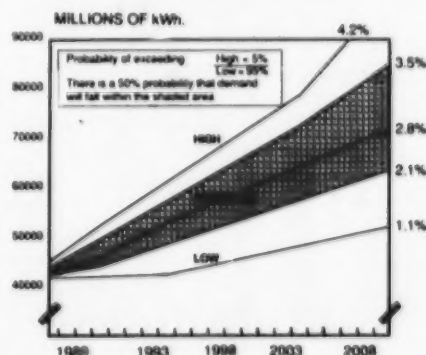
DOMESTIC SALES FORECAST (GW.h)

Fiscal Year	Residential	General	Transmission	Other	TOTAL
1988 *	9,986	11,695	13,412	996	36,089
1989 *	10,802	12,377	13,606	1,048	37,833
1990 **	11,110	12,439	14,957	1,080	39,586
1991 **	11,283	12,709	15,387	1,077	40,456
1992 **	11,447	13,107	15,567	1,369	41,491
% 1989 growth over 1988 actual	8.2	5.8	1.5	5.2	4.8
% 1990 growth over 1989 actual	2.9	0.5	9.9	3.1	4.6
% average annual growth during three year forecast period over 1989	2.0	1.9	4.6	9.6	3.1

* actual
** forecast

External factors, outside the influence of B.C. Hydro—temperature, precipitation, inflation, interest and exchange rates, economic growth, the price of other fuels—impart degrees of uncertainty into the process of load forecasting. It is for this reason that B.C. Hydro develops a range of forecasts above and below the probable load forecast. For simplicity, the most probable forecast is used as a base assumption in this plan.

Range of Forecast Demands

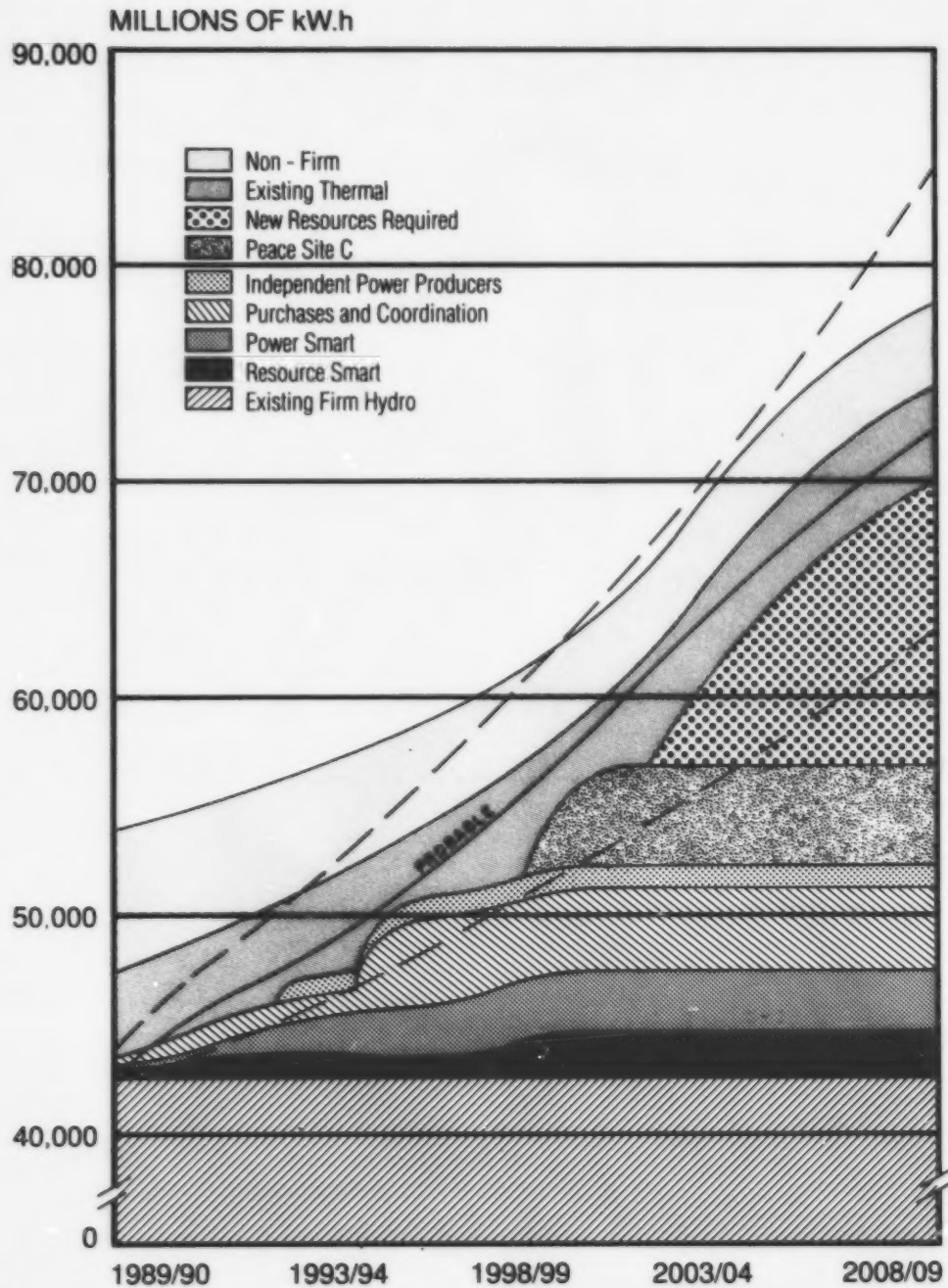


Sensitivity analysis

Factors that affect the planning process all impact on net income projections in different degrees of magnitude. The following table displays some of the key variable sensitivities.

VARIABLE (change in brackets)		PROJECTED IMPACT ON NET INCOME (\$ millions)
Export sales	(1/10 cent in kW.h rate, i.e. 4.5%)	1.0
Domestic sales	(1/10 cent in kW.h rate, i.e. 2.2%)	30.0
Property tax	(1/10 cent, i.e. 5.0%)	4.5
Interest rate	(1.0%)	20.0
U.S. exchange rate	(one cent)	3.0
Temperature	(1.0% in average annual degree days)	1.5
Salary/wage inflation	(1.0%)	1.8
Materials inflation	(1.0%)	1.3

RECOMMENDED RESOURCE PLAN TO MEET RANGE OF FORECAST DEMANDS



* Please refer to the Twenty Year Resource Plan
for the period 1989 to 2008 for additional detail
on specific energy initiatives

GLOSSARY OF TERMS

CAPABILITY The energy output of a generating station or the integrated system under specified conditions for a given time interval (usually one year).

CAPACITY Pertaining to the rating of the output from a generating station or the system.

COGENERATION The simultaneous production of mechanical or electrical energy and useful thermal energy in the form of steam or hot water from a single fuel source.

COORDINATION Pooling of resources and loads between utilities to allow more efficient use of resources. Coordination, involving joint reservoir management, may increase the annual availability of firm energy from the existing hydroelectric plants in the B.C. Hydro system. It may enable each participating utility to defer new power plant construction. Coordination agreements with other producers, such as Bonneville Power Administration, Transalta and Alcan are an important part of the 20 Year Resource Plan.

COST OF ENERGY For income statement purposes this includes water rentals, the cost of fuel for generation as well as purchases of electricity.

DEMAND The amount of electricity required by the system or by the customers.

DEMAND-SIDE MANAGEMENT Actions that influence energy demand to better match energy supply. In B.C. Hydro's case, Power Smart customer programs promote efficient energy consumption to reduce future demand so that the construction of power plants can be delayed. In this way the cost of electricity is kept in check.

FIRM ENERGY The assured energy contribution (kW.h) of generating plants over one year. For the B.C. Hydro system the firm energy capability is based on the energy available during an extended period of adverse streamflows (the critical period).

GIGAWATT HOUR (GW.h) One million kW.h. Hydro measures the energy output of generating stations in gigawatt hours. (e.g. City of Vancouver uses 4000 GW.h each year.)

GENERAL SECTOR Typically businesses in the light manufacturing/ industrial industries as well as service industries that purchase electricity at non-transmission voltages.

INDEPENDENT POWER GENERATION Electricity generation from an independent or privately-owned facility which is connected to the Hydro system. Includes self-generation and cogeneration where there may be no net sale of electricity to Hydro.

INDEPENDENT POWER PRODUCER A person or company whose independent generating facility is connected to a utility system such that electricity may be sold to and purchased from the utility.

INTEGRATED SYSTEM The interconnected network of transmission lines and substations linking generating stations to one another and to customers. Also representing that portion of the B.C. Hydro electric system capable of being operated on a coordinated basis.

LOAD The amount of electricity required by a customer or group of customers.

MEGAWATT 1000 kW, commonly used to measure the capacity of generating stations.

POWER SMART Collective name given to B.C. Hydro's energy efficiency strategy including marketing and the measures which increase the net output of existing B.C. Hydro generating stations. The reduction in future additional demand will help to defer large capital outlays and finance charges associated with new power plant construction.

RESIDENTIAL SECTOR All single electric metered dwellings occupied by customers and used as residences.

SECONDARY ENERGY The energy that is available when water conditions are such that there is more than enough water in the reservoirs to meet firm requirements of regular customers. Secondary energy is not guaranteed to always be available.

SUPPLY-SIDE OPTIONS Generic denomination including all alternatives that increase generation output, such as new generation projects, coordination and purchases, and improvements to existing facilities.

TRANSMISSION SECTOR Typically businesses in the heavy manufacturing industries including pulp and paper, wood products, mining, metals and coal, and chemical and petroleum that purchase electricity at transmission voltages.

WATER LICENCE FEE Annual payment to the provincial government in respect to the amount of electricity generated, the acres of land flooded, the installed plant capacity plus other charges for storage, etc. Also known as water rental fees.